

**CHAPTER 69-05.2-15**  
**PERFORMANCE STANDARDS - SUITABLE PLANT GROWTH MATERIAL**

Section

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**69-05.2-15-01. Performance standards - Suitable plant growth material - General requirements.** Repealed effective January 1, 1987.

**69-05.2-15-02. Performance standards - Suitable plant growth material - Removal.**

1. Timing. Suitable plant growth material must be removed after vegetative cover that would interfere with its use is cleared from the areas to be disturbed. To prevent suitable plant growth materials from becoming contaminated by other materials, all suitable plant growth materials to be saved must be separately removed and segregated as required by subsection 2 prior to any further surface disturbance.
2. Materials to be removed and saved.
  - a. The suitable plant growth materials, commonly referred to as topsoil (first lift suitable plant growth material) and subsoil (second lift suitable plant growth material) as identified by the soil survey required by section 69-05.2-08-10 must be removed and segregated in two separate operations, unless otherwise approved by the commission. The topsoil removal operation for an area must be completed before subsoil removal begins or before any other disturbances occur in that area. If use of other suitable strata is approved as a supplement to suitable plant growth material, all such materials to be saved must be removed and segregated. Further disturbances which significantly alter an area must not begin until the subsoil and other suitable strata removal operations for that area have been completed and approved by the commission. However, the commission may waive the approval of subsoil removal operations if the operator demonstrates, in a detailed soil

removal plan, surplus subsoil is available and that subsoil to be removed has good and relatively uniform characteristics. A request for such a waiver must be included as part of a detailed soil removal plan or permit revision application that contains the necessary information.

- b. (1) All topsoil must be removed from all areas to be disturbed, except in situations as provided by subsection 4.
  - (2) Sufficient subsoil must be removed from all areas to be disturbed to satisfy the redistribution requirements of subsection 4 of section 69-05.2-15-04.
- 3. Materials to be removed in shallow suitable plant growth material situations. If the thickness of suitable plant growth materials averages less than six inches [15.24 centimeters], the commission may specify other suitable strata to be removed and treated as suitable plant growth material.
  - 4. Suitable plant growth material removal will not be required for minor disturbances which occur at the site of small structures, such as power poles, signs, or fence lines.
  - 5. Suitable plant growth material supplements and substitutes.
    - a. Topsoil supplements. Selected subsoil or other suitable strata may be used as a supplement to topsoil if the permittee or operator demonstrates that the resulting soil medium is equal to or more suitable for sustaining vegetation than the available topsoil. This demonstration must include the vertical and areal extent of supplemental materials and determinations of pH, electrical conductivity, sodium adsorption ratio, percent coarse fragments, percent organic matter, texture, and other chemical or physical analyses as required by the commission. The operator may be required by the commission to include the results of any field trials or greenhouse tests to demonstrate the feasibility of using a mixture of such materials. The permittee or operator shall also demonstrate that the resulting medium is the best available soil medium in the permit area to support revegetation.
    - b. Subsoil supplements. The permittee or operator may be required to use other suitable strata to supplement subsoil materials if the commission determines additional suitable materials for spreading over affected areas are necessary to meet the redistribution requirements of subdivision a of subsection 4 of section 69-05.2-15-04, provided other suitable strata are available. Samples of the strata to be saved must be taken at sufficient locations to

determine the areal extent of the suitable strata. The sampling locations must be approved by the commission. Chemical and physical analyses of the samples taken must include pH, electrical conductivity, sodium adsorption ratio, and textural analysis as required by the commission.

- c. Subsoil substitutes. Selected overburden materials may be substituted for subsoil if the operator demonstrates to the commission that the resulting soil medium is equal to or more suitable than the available subsoil for sustaining vegetation. Overburden sampling and chemical and physical analyses must be provided by the operator as required by the commission.
- d. Supplemental and substitute materials must be removed, segregated, and redistributed according to the applicable requirements for suitable plant growth material in this chapter.

**History:** Effective August 1, 1980; amended effective June 1, 1983; January 1, 1987; May 1, 1990; January 1, 1993; July 1, 1995; May 1, 1999.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

**69-05.2-15-03. Performance standards - Suitable plant growth material  
- Storage and protection.**

- 1. Suitable plant growth materials removed as required by section 69-05.2-15-02 must be stockpiled only when it is impractical to promptly redistribute such materials on regraded areas.
- 2. Suitable plant growth material to be stockpiled must be selectively placed on a stable area within the permit area in such a manner that minimizes any loss or deterioration of such material. The stockpiled materials must be protected from wind and water erosion, unnecessary compaction, and contaminants which lessen the capability of the materials to support vegetation. During the first normal period for favorable planting after stockpile placement, an effective cover of quick-growing nonnoxious plants must be established on the stockpiles. However, as an alternative to the establishment of a protective vegetative cover, the stockpiles may be mulched or otherwise protected using methods approved by the commission.

3. Unless approved by the commission, stockpiled suitable plant growth materials may not be moved until required for redistribution on a regraded area.

**History:** Effective August 1, 1980; amended effective January 1, 1987; May 1, 1990.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

**69-05.2-15-04. Performance standards - Suitable plant growth material - Redistribution.**

1. After final grading is approved under section 69-05.2-21-06 and before the suitable plant growth material is replaced, regraded land must be scarified or otherwise treated, if necessary, to eliminate slippage surfaces or to promote root penetration.
2. Subsoil must then be redistributed as approved by the commission in a manner that:
  - a. Achieves an approximate uniform thickness consistent with the postmining land use and meets the requirements of subsection 4.
  - b. Prevents excess compaction of the spoil and subsoil.
3. Following subsoil respreading, topsoil must be redistributed as approved by the commission in a manner that:
  - a. Achieves an approximate uniform thickness consistent with the postmining land use and meets the requirements of subsection 4.
  - b. Prevents excess compaction of the suitable plant growth materials.
4. Amount of suitable plant growth materials to be redistributed.
  - a. In areas where the graded spoil materials occur:
    - (1) All suitable plant growth material inventoried and removed according to the soil survey and any other suitable strata required to satisfy section 69-05.2-21-03 must be uniformly redistributed; or
    - (2) The amount of redistributed suitable plant growth material must be based on the graded spoil characteristics as follows:

Suitable Plant Growth Material Redistribution Thickness

Spoil Properties		Total Redistribution Thickness	
Texture	Sodium Adsorption Ratio (SAR)	(Topsoil Plus Subsoil)	
		Average in Inches	(Centimeters)
Medium*	12	24	(61)
Coarse**	12	36	(91)
***	12 - 20	36	(91)
***	20	48	(122)
<p>* Loam or finer</p> <p>** Sandy loam or coarser</p> <p>*** Not applicable</p>			

- (a) The minimum thickness of redistributed suitable plant growth material in any random location must be within six inches [15.24 centimeters] of the average thickness required for an area based on the graded spoil characteristics as determined by representative sampling. However, the commission may approve redistribution thicknesses less than those listed in the table if chemical and physical analyses and any available field trials, greenhouse test results or current research findings demonstrate that the overburden materials are equal to or more suitable than the subsoil for sustaining vegetation. In addition, the commission may approve a lesser redistribution thickness if an insufficient amount of material exists based on the results of the soil survey and the availability of other suitable strata pursuant to subdivision b of subsection 5 of section 69-05.2-15-02.
  - (b) The texture, sodium adsorption ratio, and saturation percentage of the graded spoil materials will be determined by a commission evaluation of the premine overburden data, sample analyses of the graded spoil conducted by the operator, or by a combination of these methods.
- b. The amount of redistributed suitable plant growth materials in associated disturbance areas where graded spoil materials do not occur must be based on the amount removed under subsection 2 of section 69-05.2-15-02.
5. Following the resspreading of suitable plant growth materials, appropriate measures must be taken to protect the area from wind and water erosion.

6. The suitable plant growth material and other suitable strata and substitutes saved from property owned by one party must be respread within the boundaries of that property if the surface ownership of the permit area is split between two or more parties, unless the parties otherwise agree.

**History:** Effective August 1, 1980; amended effective June 1, 1983; January 1, 1987; May 1, 1990; May 1, 1992; June 1, 1994; June 1, 1997; May 1, 1999.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

**69-05.2-15-05. Performance standards - Suitable plant growth material - Nutrients and soil amendments.** The operator shall apply necessary nutrients and soil amendments to the redistributed surface soil layer. Soil tests to identify nutrients, amendments, and rates must be performed by a qualified laboratory using standard methods.

**History:** Effective August 1, 1980; amended effective June 1, 1983; May 1, 1990.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24

**69-05.2-15-06. Performance standards - Suitable plant growth material - Stabilizing rills and gullies.** When rills and gullies deeper than nine inches [22.86 centimeters] form in areas that have been regraded and respread with suitable plant growth material, the operator shall fill, grade, or otherwise stabilize the rills and gullies and reseed or replant the area. The commission will require rills or gullies of lesser size to be filled, graded, or otherwise stabilized and the area reseeded or replanted if the rills or gullies would preclude the successful establishment of vegetation or the achievement of the postmining land use or if the rills or gullies may result in additional erosion and sedimentation.

**History:** Effective August 1, 1980; amended effective May 1, 1990.

**General Authority:** NDCC 38-14.1-03

**Law Implemented:** NDCC 38-14.1-24